No. 8000164

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Michigan Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COMMON WHEAT

'Augusta'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 14th *day of* January *in the year of our Lord one thousand nine hundred and* eighty-two.

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

INSTRUCTIONS: *See Reverse.*

FOR OFFICIAL USE ONLY

1a. TEMPORARY DESIGNATION OF VARIETY: Augusta	1b. VARIETY NAME: Augusta
2. KIND NAME: Wheat	3. GENUS AND SPECIES NAME: Triticum aestivum
4. FAMILY NAME (BOTANICAL): Gramineae	5. DATE OF DETERMINATION: December, 1977 ~~Feb. 15, 1979~~ 9/24/81
6. NAME OF APPLICANT(S): Michigan Agricultural Experiment Station	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: Michigan State University, E. Lansing, MI 48824
8. TELEPHONE AREA CODE AND NUMBER: 517-353-9545	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*: State-Federal Institution	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION:
11. DATE OF INCORPORATION:	

PV NUMBER: 8000164	
FILING DATE: 9/30/80	TIME: 3:00 A.M. (P.M.)
FEE RECEIVED: $ 500.00 $ 250.00	DATE: 9/30/80 10/20/81

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
Dr. L.O. Copeland, Associate Professor, Dept. of Crop and Soil Sciences, Michigan State University, E. Lansing, Michigan 48824

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [X] YES [ ] NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? ~~8~~ 10/1180
[X] FOUNDATION [ ] REGISTERED [X] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [XX] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

X July 21, 1980
(DATE)

X [signature]
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

SEP 30 1980

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

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EXHIBIT A - ORIGIN AND BREEDING HISTORY

Augusta is the result of selections from a 1967 cross of Genesee/Redcoat, A2747//Yorkstar. Selections were made throughout the breeding process for plant type, straw height, leaf rust resistance, winter hardiness, and milling and baking quality. Only the superior lines with high stable performance were used as parents for the next echelon of crosses. Approximately 450 headrows were selected from 500 in the F_{10} generation on the basis of plant height, glume and kernel color, individually increased in 48 ft^2 plots and bulked to represent breeder seed.

Concerning Exhibit A, the following information should clarify the selection procedures for all generations:

F_1 - Bulk harvested from original crosses.

F_2 - Planted in 12-18 ft. rows and 300 individual plants were selected on basis of plant type, mildew, and rust characteristics.

F_3 - Established in four 18 ft. rows and 200 individual plants were selected on basis of plant # type, mildew and leaf rust characteristics.

F_4 - Planted in four 18 ft. rows and 100 heads were selected on basis of mildew and leaf rust resistance.

F_5 - Three ft. headrows planted and 100 heads selected on basis of mildew, and leaf rust resistance.

F_6 - Four 18 ft. preliminary yield plots established. No selection.

F_7 - Advanced yield plots - no selection.

F_8 - Advanced yield plots - no selection.

F_9 - Advanced yield plots - no selection.

F10 - 500 headrows planted and 400 were selected and bulked for breeder seed on basis of plant type and mildew, and leaf rust resistance.

The variety is uniform and stable for the characteristics described and within the limits of the acceptable variants as follows.

1. Bearded brown chaffed variant (104 cm high) - 0.03%

2. Apically awnleted brown headed variant (104 cm high) - 0.25%
3. Taller apically awnleted brown headed variant (108-115 cm high) - 0.25%

Amended through photocopy 9/22/81 JD

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EXHIBIT B - NOVELTY STATEMENT

Augusta is a beardless soft white winter wheat with a slight tendency to have awnlets on the apica spikelets. It has white colored glumes at maturity, and a rather large head, tapering slightly toward the apex. The soft white varieties closest in appearance is Yorkstar and Frankenmuth, however both have brown colored glumes compared to white for Augusta. It is also similar in plant height (36 in) and glume color (white) to Fredrick, but is susceptible to all known races of Hessian fly, whereas Fredrick is resistant to races A and C.

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6 (2-15-73)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C (*Wheat*)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S): Michigan Agricultural Experiment Station

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*):
Michigan State University
East Lansing, Michigan 48824

FOR OFFICIAL USE ONLY
PVPO NUMBER: 8000164
VARIETY NAME OR TEMPORARY DESIGNATION: Augusta

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) ______
[1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) ______ 5/5/81
[1] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) ______

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[0 7 3] FIRST FLOWERING
[0 8 0] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[-- --] NO. OF DAYS *EARLIER* THAN .... [~~1~~]
[0 8 7] NO. OF DAYS *LATER* THAN .... [1] 9/22/81
1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (*From soil level to top of head*):
[1 0 2] CM. HIGH
[1 0] CM. TALLER THAN .... [1]
[-- --] CM. SHORTER THAN .... [ ]
1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0 3] NO. OF NODES (*Originating from node above ground*)
[2 9] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): ______
[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1 6] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2 3] CM. LEAF LENGTH (*First leaf below flag leaf*)

FORM GR-470-6 (REVERSE)

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER *(Specify)* ______

[2] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

Ex D. alt. 9/1/81 call D 9/1/81

[3/5] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER *(Specify)*: ______

[1][3] CM. LENGTH

[1][2] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT *(CA. 7 mm.)* 2 = MEDIUM *(CA. 8 mm.)* 3 = LONG *(CA. 9 mm.)*

[3] Width: 1 = NARROW *(CA. 3 mm.)* 2 = MEDIUM *(CA. 3.5 mm.)* 3 = WIDE *(CA. 4 mm.)*

[3] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[2] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[ ] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[ ] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[3] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

D 9/22/81

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

D 9/22/81

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[2] Phenol reaction *(See instructions)*: 1 = IVORY• 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK D 9/22/81

D 9/22/81

[1] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER *(Specify)* ______

[0][7/8] MM. LENGTH D 9/22/81

[0][4] MM. WIDTH

[4][5] GM. PER 1000 SEEDS

17. SEED CREASE:

[2] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI' D 9/22/81

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI' 9/22/81

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[1] STEM RUST *(Races)* ______

[2] LEAF RUST *(Races)* ______

[1] STRIPE RUST *(Races)* ______

[1] LOOSE SMUT

[1] POWDERY MILDEW

[1] BUNT

[ ] OTHER *(Specify)* ______

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[1] SAWFLY

[1] APHID *(Bydv.)*

[1] GREEN BUG

[1] CEREAL LEAF BEETLE

[2] OTHER *(Specify)* ______

HESSIAN FLY RACES: [1] GP [1] A [1] B [1] C [1] D [1] E [1] F [1] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Frankenmuth	Seed size	Frankenmuth
Leaf size	Frankenmuth	Seed shape	Frankenmuth
Leaf color	Frankenmuth	Coleoptile elongation	Frankenmuth
Leaf carriage	Frankenmuth	Seedling pigmentation	Frankenmuth

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. *(See attachment.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

SEP 30 1980

le 1. Wheat variety comparisons. (Exhibit D)

	Variety	Origin	Chaff Color	Straw Height (in)	Test Weight (lbs)	Hessian Fly Resistance	Winter Hardiness	Lodging Resistance	Leaf Rust Resistance	Powdery Mildew Resistance
Soft White Wheat Varieties	Arrow	New York	bronze	36	59.0	none	good	very good	susceptible	susceptible
	Augusta	Michigan	white	39	57.7	none	good	very good	resistant	susceptible
	Frankenmuth	Michigan	brown	40	59.4	Races A & C	good	very good	resistant	resistant
	Fredrick	Canada	white	39	59.5	Races A & C	good	good	resistant	susceptible
	Genesee	New York	bronze	45	59.5	none	good	good	susceptible	susceptible
	Houser	New York	white	34	57.7	none	good	very good	resistant	resistant
	Ionia	Michigan	brown	42	59.7	Race A	good	good	resistant	susceptible
	Tecumseh	Michigan	white	37	61.1	Races A & C	very good	very good	resistant	resistant
	Yorkstar	New York	bronze	39	57.5	none	good	very good	susceptible	susceptible
Soft Red Wheat Varieties	Abe	Indiana	white	34	60.4	all known races	very good	very good	resistant	resistant
	Argee	Wisconsin	white	35	58.5	reaction unknown	very good	very good	resistant	resistant
	Arthur	Indiana	white	36	60.5	all known races	very good	very good	resistant	resistant
	Arthur 71	Indiana	white	36	60.5	all known races	very good	very good	resistant	resistant
	Beau	Indiana	white	35	60.4	all known races	very good	very good	susceptible	resistant
	Downey	Indiana	white	32	59.0	all known races	good	good	susceptible	resistant
	Oasis	Indiana	white	36	60.5	all known races	very good	very good	resistant	susceptible
	Pioneer S-76	Pioneer	white	33	58.8	none	good	very good	susceptible	susceptible
	Pioneer S-78	Pioneer	white	31	58.6	none	good	very good	susceptible	susceptible
	Roland	Illinois	white	34	58.2	reaction unknown	very good	very good	resistant	resistant
	Ruler	Ohio	white	36	60.5	Races A, C & F	very good	very good	susceptible	susceptible
	Sullivan	Indiana	white	40	58.5	all known races	good	good	resistant	resistant
	Titan	Ohio	white	39	59.0	Race A	very good	very good	resistant	resistant

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Table 6. Wheat, milling, and flour analytical and baking data, and quality scores, Michigan Drill Plot entries, 1979 crop.

LAB NO.	ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	COMBINED QUALITY SCORE	MOIS. PCT.	TEST WT. KG/HL	PROT. PCT.	ASH PCT.	WHEAT PART. SIZE INDEX PCT.	SIZING FLOUR CONT. PCT.	RED. PASS	BREAK FLOUR YIELD PCT.	FLOUR YIELD PCT.	MILLAB. SCORE
MICHIGAN DRILL PLOT SERIES														
I01 SERIES														
STANDARD=79163 (AUGUSTA)														
	STANDARD	100.0 A	100.0 A	100.0 A	11.0	77.8	10.6	1.63	34.7	9.6	10.	29.0	76.1	108.7
79150	I01 M0001 GENESEE	98.2 B	88.6 D	88.6 D	11.1	79.1	11.9*	1.60	32.6*	10.2*	11.	26.1Q	76.5	108.9
79151	I01 M0201 ARTHUR	96.2 B	85.6 D	85.6 D	10.7	79.8	12.9Q	1.67	32.3*	11.1Q	11.	24.1Q	76.4	107.0
79152	I01 M0202 YORKSTA	102.2 A	103.1 A	102.2 A	11.1	77.8	11.0	1.55	34.9	9.7	11.	28.6	76.7	112.7
79153	I01 M0260 IONIA	92.1 C	88.7 D	88.7 D	11.2	79.6	11.9*	1.62	31.3Q	10.9Q	12.	26.9Q	76.0	100.3
79154	I01 M0263 ABE	85.5 D	80.3 E	80.3 E	10.7	80.0	13.1Q	1.69	35.0	12.5Q	12.	24.3Q	75.5*	90.6
79155	I01 M0266 FREDRIC	96.4 B	100.9 A	96.4 B	11.5	79.8	11.9*	1.63	36.8	11.0Q	12.	28.7	75.6*	103.9
79156	I01 M0276 RULER	95.0 B	80.6 E	80.6 E	11.2	81.6	11.7*	1.57	36.5	13.0Q	12.	28.8	75.6*	101.6
79157	I01 M0280 TECUMSE	105.5 A	88.0 D	88.0 D	11.3	80.6	13.3Q	1.72	35.1	9.2	10.	25.6Q	77.9	119.8
79158	I01 M0282 BENJ	83.5 E	82.1 E	82.1 E	10.7	80.7	13.8Q	1.76	35.3	13.5Q	12.	25.7Q	75.0Q	88.3
79159	I01 M0284 HOUSER	104.2 A	102.0 A	102.0 A	10.9	76.7	10.9	1.72	36.8	9.5	10.	31.8	76.7	115.2
79160	I01 M0285 SULLIVA	90.5 C	87.3 D	87.3 D	10.6	80.6	13.1Q	1.68	34.7	12.8Q	12.	24.2Q	75.2Q	97.9
79161	I01 M0286 TITAN	90.7 C	92.8 C	90.7 C	11.0	79.3	11.2	1.58	34.7	13.3Q	12.	29.8	74.3Q	95.6
79162	I01 M0290 FRANKEN	105.0 A	94.2 C	94.2 C	11.0	80.1	11.3	1.63	33.5	9.3	11.	28.0*	76.7	116.7
79163	I01 M0300 AUGUSTA	100.0 A	100.0 A	100.0 A	11.0	77.8	10.6	1.63	34.7	9.6	10.	29.0	76.1	108.7
79164	I01 B2090	105.2 A	99.6 B	99.6 B	11.0	78.8	10.7	1.63	32.9*	9.2	10.	28.5	76.5	116.7
79165	I01 B2202	97.6 B	103.5 A	97.6 B	11.2	77.9	10.5	1.59	33.3*	10.6Q	12.	28.3*	75.5*	105.5
79166	I01 B2212	108.0 A	100.2 A	100.2 A	11.1	78.8	10.4	1.52	34.5	9.3	10.	28.5	76.7	119.2
79167	I01 B2222	102.1 A	90.8 C	90.8 C	11.2	80.1	11.4	1.59	33.7	10.0	11.	27.6Q	76.9	112.5
79168	I01 B2344	97.0 B	79.1 F	79.1 F	11.3	79.1	11.2	1.53	31.1Q	11.0Q	10.	27.0Q	75.7	106.5
79169	I01 B3013	101.8 A	103.3 A	101.8 A	11.2	77.5	10.9	1.62	33.2*	9.5	11.	28.0*	76.9	112.9
79170	I01 B3121	103.2 A	92.1 C	92.1 C	11.3	78.3	10.5	1.62	35.0	9.6	11.	26.8Q	76.6	112.6
79171	I01 B3024	94.7 C	91.8 C	91.8 C	10.2	77.3	10.9	1.61	33.4	10.6Q	10.	27.9*	76.1	102.6
79172	I01 B3144	107.8 A	97.8 B	97.8 B	11.2	78.2	10.7	1.55	33.7	8.8	10.	29.1	76.8	120.4
79173	I01 B4014	103.3 A	95.2 B	95.2 B	11.2	78.3	10.5	1.63	33.9	9.3	11.	29.1	76.8	113.3
79174	I01 B4021	105.7 A	90.5 C	90.5 C	11.0	78.0	10.4	1.56	33.3*	9.2	11.	28.2*	76.4	116.9
79175	I01 B4128	101.9 A	94.3 C	94.3 C	11.4	77.5	10.6	1.58	35.1	9.7	11.	29.4	76.1	111.4
79176	I01 B5008	104.2 A	99.8 B	99.8 B	11.5	80.0	11.0	1.59	35.9	9.2	11.	28.9	77.1	113.8

Table 6 (contd.). Wheat, milling, and flour analytical and baking data, and quality scores, Michigan Drill Plot entries, 1979 crop.

LAB NO.	STRAIGHT-GRADE FLOUR MOIS. PCT.	ASH PCT.	PROT. PCT.	VISC. AS IS MACM.	VISC. ADJ. MACM.	MICRO AWRC PCT.	COOKIE DIAM. CM.	TOP GRAIN	CAKE PATENT FLOUR ASH PCT.	PROT. PCT.	INIT. PH	FINAL PH	CHLORINE RESPONSE PH/ML/G	CPT. LIQUID LEVEL ML.	CAKE VOLUME ML.	INTERNAL SCORE
	13.6	.41	9.0	56.	75.	47.5	17.9	6.	.31	8.2	5.96	4.84	2.66	140.	1048.	89.
79150	13.4	.41	10.3*	53.	48.	49.3*	17.9	6.	.29	9.3*	5.89	4.91	2.39	130.	1061.	88.
79151	13.8	.41	11.6Q	91.	57.	48.8*	17.8	6.	.30	10.5Q	5.79	4.85	2.23	130.	1067.	87.
79152	13.7	.40	9.3	44.	51.	47.7	18.3	6.	.31	8.5	5.89	4.87	2.42	130.	1049.	88.
79153	13.6	.43	10.5*	66.	58.	49.0*	17.8	5.	.30	9.5*	5.89	4.82	2.48	130.	1050.	89.
79154	14.0	.44*	11.7Q	113.	72.	49.1*	17.7	5.	.32	10.6Q	5.78	4.84	2.18	125.	1100.	84.
79155	13.5	.40	10.2*	64.	59.	47.8	18.1	6.	.31	9.1*	5.80	4.81	2.47	130.	1078.	89.
79156	13.6	.39	10.4*	77.	66.	50.3Q	17.8	6.	.27	9.1*	5.89	4.83	2.71	120.	1064.	82.
79157	13.7	.41	11.9Q	127.	75.	49.0*	17.9	6.	.30	10.6Q	5.67	4.82	2.23	130.	1080.	89.
79158	13.7	.42	12.4Q	133.	70.	48.7*	17.7	4.	.29	11.1Q	5.74	4.75	2.30	130.	1095.	85.
79159	13.7	.39	9.2	56.	69.	48.0	18.2	6.	.29	8.2	5.83	4.75	2.63	130.	1021.	68.
79160	13.9	.40	12.2Q	125.	67.	48.6*	17.8	5.	.29	11.0Q	5.73	4.75	2.27	130.	1096.	88.
79161	13.7	.38	10.1*	74.	68.	49.1*	17.9	5.	.28	9.0	5.80	4.80	2.70	130.	1080.	90.
79162	13.4	.39	9.8	61.	62.	48.9*	18.0	6.	.30	8.9	5.88	4.81	2.60	130.	1056.	89.
79163	13.6	.41	9.0	56.	75.	47.5	17.9	6.	.31	8.2	5.96	4.84	2.66	140.	1048.	89.
79164	13.2	.39	9.3	43.	49.	48.5	18.3	7.	.29	8.4	5.86	4.80	2.65	130.	1069.	88.
79165	13.6	.40	9.0	41.	53.	48.4	18.1	7.	.29	8.1	5.90	4.81	2.79	130.	1066.	91.
79166	13.6	.38	9.2	38.	44.	48.3	18.1	6.	.29	8.3	5.82	4.85	2.69	130.	1059.	89.
79167	12.9	.41	10.0*	64.	62.	48.3	17.8	5.	.30	8.9	5.88	4.78	2.44	130.	1057.	88.
79168	13.1	.39	9.7	63.	67.	51.2Q	17.4Q	5.	.29	8.7	5.80	4.79	2.65	130.	1055.	88.
79169	13.6	.41	9.3	41.	49.	48.3	18.1	7.	.31	8.4	5.88	4.73	2.60	130.	1065.	91.
79170	13.6	.40	8.9	42.	57.	48.7*	17.9	6.	.31	8.1	5.86	4.70	2.76	130.	1069.	86.
79171	13.5	.42	9.5	51.	60.	49.1*	18.0	6.	.32	8.6	5.85	4.70	2.55	130.	1062.	87.
79172	13.5	.38	9.3	39.	44.	48.4	18.1	6.	.29	8.4	5.85	4.75	2.82	130.	1081.	87.
79173	13.5	.41	9.2	41.	50.	48.2	18.0	6.	.31	8.4	5.91	4.79	2.80	130.	1103.	85.
79174	13.9	.38	8.9	37.	47.	49.1*	17.9	5.	.29	8.1	5.92	4.76	2.90	130.	1083.	85.
79175	13.7	.39	9.0	45.	58.	48.7*	18.1	6.	.31	8.2	5.90	4.78	2.80	130.	1120.	82.
79176	13.5	.41	9.5	47.	54.	48.2	18.0	5.	.31	8.6	5.85	4.77	2.70	130.	1098.	90.